

BKK CORPORATION



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June 2, 1981

John Mullins
Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Dear John,

Thank you for the opportunity to comment on the preliminary report on how the ban on landfilling liquid waste at sites without a liner affects California and BKK Corporation. I feel that your analysis generally was thorough and accurate in addressing the issues raised. However, I would like to submit additional data and comments which I believe will assist you in formulating final proposals regarding comingling of industrial liquid wastes with municipal refuse at the BKK Landfill.

I suggest reconsideration of BKK's use of "in situ" mixing of liquid wastes with municipal refuse in terms of other disposal and treatment practices in California. Firstly, neutralization is merely the selective, controlled mixing of acids and caustic materials, usually done in a laboratory or in an impoundment at a land disposal site. There are no standards, per se, for "neutralized" waste. Certainly, some neutralization occurs in a liquid waste landfill.

Ponding simply utilizes solar evaporation to dewater and remove volatile compounds from the waste, leaving the remaining sludges to be disposed of by some form of land application. It should be noted that the State Air Resources Board has scheduled hearings to formulate new regulations governing hazardous waste disposal, and ponding of certain wastes may be prohibited. [Ponding already is prohibited by the City of West Covina's permit for the BKK operation.] Land application is nothing more than "in situ" mixing of liquid wastes with earth utilizing evaporation, biodegradation and the absorptive capacity of the soil to modify properties of the original waste. The high-volume Kettleman Hills and Casmalia sites use a land application. BKK's process of comingling essentially combines all these processes.

In discussions of the disposal ratio at the BKK site, no consideration has been given to the capacity of on-site soils to absorb the liquid wastes and render them immobile until evaporation or biodegradation modifies their properties. A company study has shown that the fine-grained siltstone used for daily landfill cover has an in-place moisture content of 20% and could retain as much as 50% liquid. The quantity of earth used in cover operations in 1980 totalled about 571,000 cubic yards or 905,850 tons.

None of the weight was included in the daily operational ratios reported to regulatory agencies. If the 905,850 tons of earth was considered to be a "Land Application" it could retain 30% liquid in addition to its natural moisture content, accomodating 271,755 tons of liquid waste. BKK disposed of 464,444 tons of liquid waste in 1980. If the earth were included in the calculation of the engineered ratio of liquids to in-place solids, the following calculation would be representative:

Solid Waste (1980)	1,185,077
Earth Cover (1980)	<u>905,850</u>
TOTAL SOLIDS	2,090,927
Liquid Waste (1980)	464,444
Ratio of Solids To Liquids	4.5 to 1

BKK reports to the City of West Covina, the California Regional Water Quality Control Board and California Department of Health Services have contained substantial quantities of sludges and semi-solids in the category of "liquid" wastes as there was no necessity to determine what portion of a load of liquid waste was solids or how flowable a sludge was. The disposal method for each material was the same. Keeping in mind that the reported liquid waste quantity includes a substantial amount of solids, semi-solids and sludges, the actual ratio is higher.

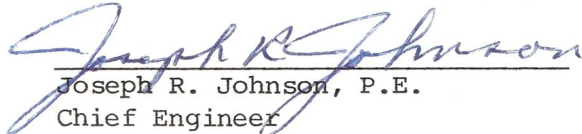
Approximately 60% of all liquid wastes disposed of at the BKK site are oily wastes which are biodegradable in earth or in a landfill environment. The long-term additional contribution of solid biodegraded hydrocarbon residues to the total solids ratio in the landfill also has not been considered.

Another very important aspect of the BKK situation is that there is no known aquifer beneath or adjacent to the site. Even if leachate was present, there would be no usable underground water to be contaminated. Thus, the site could be granted a variance for that reason alone. Additionally, a leachate extraction system has been built and is monitored and maintained. Fluid extraction will remove any hydraulic head, thereby reducing the likelihood of any migration significantly. This element was not included in the model analyzed in the paper prepared by staff of the Los Angeles County Sanitation Districts. With a leachate extraction system in place, any free leachate can be removed, treated, and properly disposed.

Overall, then, I believe the reported 2:1 ratio actually is equal to a functional ratio of at least 5:1. I believe there is no reason to set a new standard as the existing requirements coupled with site hydrogeology provide more than adequate protection.

Under separate cover I previously forwarded other data you requested to aid in your analysis. Please feel free to contact me should you have any comments or questions or need additional information.

Sincerely,


Joseph R. Johnson, P.E.
Chief Engineer

JRJ:dk

cc: File-EPA
File-Landfill